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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,277	01/04/2002	Frank D. Husson JR.	SOLAR1120-3	1245
30542	7590	07/10/2006	EXAMINER	
FOLEY & LARDNER LLP			PRICE, CARL D	
P.O. BOX 80278			ART UNIT	
SAN DIEGO, CA 92138-0278			PAPER NUMBER	
			3749	
DATE MAILED: 07/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,277	HUSSON, FRANK D.	
	Examiner	Art Unit	
	CARL D. PRICE	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005 and 14 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,7,9,10,12-15,17-22,26,37-39,43,44 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,7,9,10,12-15,17-22,26,37-39,43,44 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION**Response to Arguments**

Applicant's arguments with respect to claims 1, 3, 6, 7, 9, 10, 12-15, 17-22, 26, 37-39, 43, 44 and 47 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further with regard to applicant's arguments against the **GB 1 517 449** reference individually, applicant's statement that this reference does not disclose "an insulation structure sufficient to enable the pasteurizer to achieve temperatures of at least 60° C" and lacks any "insulating structures" mischaracterizes both the manner in which the examiner has applied this prior art reference and the explicit disclosure therein (**GB 1 517 449**) of the ability of the solar heater to heat 2 gallons of water to a temperature of "58/59° C" when exposed to "solar energy for 50 minutes" as well as the explicit reference to a "heat insulating base layer" (see page 2, lines 16-23). Regarding the claimed operating temperature range of "at least 60° C", a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.) (See MPEP § 2131.03). Given that **GB 1 517 449** demonstrates that it is capable of heating 2 gallons of water to a temperature of 58/59° C when exposed to solar energy for 50 minutes the Examiner maintains the position that **GB 1 517 449** is capable of achieving applicant's claimed temperatures of at least 60° C, since one skilled in the art would have expected and predicted such operating temperatures when for example extending the length of time the unit is exposed to solar energy, decreasing the volume of water, etc. Indeed the teaching of **SODIS Technical**

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Note #17, Sodis Bags and Temperature Sensors clearly establishing the level of ordinary skill in the art regarding the predictable use of solar energy collectors to achieve pasteurization of water when operated under suitable conditions, as well as the known application of water pasteurization indicators (WAPI) to indicate when pasteurization temperatures have been achieved. Further in support of the examiner's position applicant's attention is directed to the exact language of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** which characterizes the 50° C temperature as a "threshold" water temperature; **SODIS Technical Note #9** (of record) which states *"Microorganisms are heat sensitive. Table 2 lists up the required temperature to eliminate microorganisms within 1, 6 or 60 minutes. It can be seen that it is not required to boil the water in order to kill 99.9% of the microorganisms. Heating up water to 50-60° C for one hour has the same effect"*; and, and "Enhancement of Solar Water Pasteurization with Reflectors" Negar Safapour and Robert H. Metcalf, Department of Biological Sciences, California State University Sacramento, Sacramento, California 95819-6077 Received 13 July 1998/Accepted 3 November 1998 (of record) states with regard to water pasteurization temperature *"in order to verify that sufficient water temperatures (at least 65° C) were obtained, we included a reusable water pasteurization indicator (WAPI) which was developed for SCI (Fig. 2). The WAPI is a clear polycarbonate tube partially filled with a soybean wax which melts at about 70° C. The WAPI tube is placed at the bottom of a black jar of water which is solar heated."* In view of the level of ordinary skill in the art as a whole represented in these prior art teachings, the examiner maintains that a person having this ordinary skill in applicant's field of endeavor would have used known reusable water pasteurization indicators (WAPI) in portable solar water heater containers, such as in **GB 1 517 449**, to indicate the water in the heater has reached a temperature appropriate to ensure pasteurization.

And, regarding the use of "foam" insulation the examiner continues to hold the position that it would have been obvious to a person having ordinary skill in the art to use "foam" insulation as a suitable thermal insulation barrier in **GB 1 517 449** as taught by **Burkhardt**.

In response to applicant's argument that the examiner has combined five references, reliance on a large number of references in a rejection does not, without more, weigh against the

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obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Furthermore, in this regard applicant's attention is directed to the Examiner's position set forth in the last office action and re-stated herein below:

Based on the information presented herein above the examiner's position regarding the prior art teaching of Ryder is unchanged. Applicant's attention is directed to the following definitions and word analysis of the terms **"sterilize"** and **"pasteurization"**. While the temperature indicator of Ryder is characterized in the context of a "sterilization" system a person having ordinary skill in the art would have recognized the relationship, and relevance, of such a device to "pasteurization" apparatus. As can be seen from the information presented herein above, a person having ordinary skill in the art would understand sterilization as synonymous with pasteurization. And, a person having ordinary skill in the art would clearly understand the close relationship between pasteurization and sterilization since pasteurization is known as "partial sterilization of a substance".

Applicant is reminded that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The examiner also recognizes that it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular

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problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, given the level of ordinary skill in the art as that of a person recognizing the relationship between pasteurization and sterilization, as noted herein above, when attempting to solve the problem of monitoring temperature conditions within a water vessel to make clean, or to destroy objectionable organisms would be motivated look to analogous and indeed highly relevant teachings such as that presented by Ryder. Applicant's argument that Ryder is non-analogous since it "relies on external heating device" is noted, but not found persuasive. The heat applied externally to the container in Ryder is not unlike, and indeed analogous to, the solar water pasteurizer of applicant's claimed invention heated externally from solar energy radiation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over **GB 1 517 449** (of record) in view of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** (of record), **Burkhardt** (U.S. Patent No. 4557251) (of record), **Ryder** (U.S. Patent No. 3939968) (of record) and **US2847067** (Brewer)(of record).

GB 1 517 449 shows and discloses a solar drinking water heater from heat sealed flexible transparent, reflective and opaque sheets (2, 3, 4), where the lower sheet 4 should be a 2-ply laminate comprised of a heat insulating base layer and an upper membrane of material with a reflective surface, and a bottom rear wall mounted filling cap and spout, acting as an "inlet and outlet" water opening, cap (7, 9) and a top insulative air chamber (see figure 6). The material forming the solar drinking water heater of **GB 1 517 449** being capable of maintaining water temperatures in the range of at least 60⁰ C (see page 2, lines 53-61).

GB 1 517 449 shows and discloses the invention substantially as set forth in applicant's claims with possible exception to:

- a glass reusable transparent pasteurizer temperature history indicator secured, via a bracket, to the removable container sealing cap wherein the temperature history determined by visual inspection of a eutectic mixture located within a transparent container; and
- the use of foam insulation.

Ryder (U.S. Patent No. 3939968) teaches, from the same sterilization/pasteurizer indicator field of endeavor, that it is known to secure a reusable transparent sterilization/pasteurizer indicator (37,40), via a bracket (14), to a removable container sealing cap (11). The temperature history being determined by visual inspection of a eutectic mixture located within a transparent container.

SODIS Technical Note #17, Sodis Bags and Temperature Sensors (see also "A SUMMARY OF WATER PASTEURIZATION TECHNIQUES" (Dale Andreatta, Ph. D. P.E.); "Recent Advances in Solar Water Pasteurization and "Enhancement of Solar Water Pasteurization with Reflectors"). **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** discloses the use of reusable water pasteurization indicators (i.e. – WAPI) placed within portable solar water pasteurization devices. The reusable water pasteurization indicators (WAPI) include a transparent container relying on a volume of wax to be melted thereby indicating the device has reached a temperature appropriate to ensure pasteurization. In each of these prior art teachings, the indicator is reused by turning over the wax container to re-orient the wax to the top of the container. It is noted that reusable water pasteurization indicators **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** operate in a manner not unlike that the indicator in **Ryder** (i.e. - a transparent container relying on a volume of wax to be melted thereby indicating the device has reached a temperature appropriate to ensure sterilization).

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US2847067 (Brewer) teaches, from the same sterilization/pasteurizer indicator field of endeavor, that it is known to use molten pellet as a temperature responsive material held in a repositionable/re-usable glass vial sterilization temperature indicator. **US2847067 (Brewer)** also teaches using the disclosed temperature indicator as a means to measure and to insure an adequate period of time for achieving sterilization.

Burkhardt teaches, from applicant's same portable flexible solar energy water heating field of endeavor, that it is well known to make use of energy collected from solar radiation to, in portable devices, raise the temperature of water sufficient to bring about pasteurization/sterilization of the water for **"the purpose of sterilizing water where a supply of pure water is not available."** **Burkhardt** furthermore discloses a useful relationship between water depth (about 4 cm), water temperature (boiling point), rate of heating of the water, available solar radiation (an average summer's day) and time (about 8 hours) necessary to achieve the stated purpose. **Burkhardt** therefore clearly teaches the person having ordinary skill in the art that a suitable time necessary to bring about sterilization/pasteurization of water in a portable solar water processing method or apparatus is dependant on numerous design concerns such as those listed herein above. In addition, **Burkhardt** clearly teaches the person having ordinary skill in the art techniques necessary for permitting solar radiation to be directed into the water body, and for reducing heat loss from the body of water. **Burkhardt** includes, for example, a sealed air space between the transparent cover (21) and an upper wall (28) of the water container, applying a layer of foam insulation about the side and rear portions of water body to reduce heat loss, selecting materials having properties suitable for the high temperature operation of the apparatus, forming the water container of a light-transparent material while coating the upper/inner surface of the insulated backing layer with a black light-absorptive coating, etc. The overall arrangement of elements of the solar water heater/sterilizer of **Burkhardt** being not unlike that claimed by applicant. The container of **Burkhardt** is both flexible and expansive in that "In use, under pressure of boiling water within the flask 13, the back wall 29 bulges downwardly into contact with the adjacent surface 50 of the insulation material 19 ...".

In regard to claims **1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47**, for the purpose of generating potable sterilized/pasteurized water in an location where a supply of pure water is not available, it would have been obvious to a person having ordinary skill in the art to modify, by providing suitable foam insulation, and operate the apparatus of **GB 1 517 449** for a period of time sufficient to achieve water temperatures of at least 60 degrees C, in a method of water pasteurization, in view of the teaching of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** and/or **Burkhardt**. Also, in regard to claims 1 and 43, in particular, for the purpose of providing means to visually inspect and monitor the temperature history of a water heating cycle during operation of the heater to pasteurize water, or a method of pasteurizing water, it would have been obvious to a person having ordinary skill in the art to substitute or modify the cap of **GB 1 517 449** to include a bracket mounted reusable transparent sterilization/ pasteurizer indicator (WAPI), in view of the teaching of **Ryder**. That is, in view of the level of ordinary skill in the art represented by the prior art teaching in **SODIS Technical Note #17, Sodis Bags and Temperature Sensors**, the examiner maintains that a person have this ordinary skill in applicant's filed of endeavor would have used known reusable water pasteurization indicators (WAPI) in portable solar water heater containers, such as in **GB 1 517 449**, to indicate the water in the heater has reached a temperature appropriate to ensure pasteurization. And, in view of the teaching of **Ryder**, it would have been obvious to a person having ordinary skill in the art to position and/or secured the reusable water pasteurization indicator to the cap, so as to provide ease of access and operation thereof. Also, in view of the teachings of **US2847067 (Brewer)**, it would have been obvious to a person having ordinary skill in the art to use wax as the in temperature responsive material held in a glass vial, and to use the temperature indicator as a means to measure and to insure an adequate period of time for achieving sterilization/pasteurization of the water in **GB 1 517 449**. And, Official Notice is also taken that glass is well known for its non-reactive characteristic when used at high temperatures and when used to contain a variety of chemical species (e.g. – glass is notoriously well known in laboratory applications, mercury thermometers, etc.). Therefore, in view of that which is well known, for the purpose of providing a non-reactive chemical resistant material, it would have been obvious to a person having ordinary skill in the art to use glass to contain a temperature indicator.

Claims 10, 14, 15 and 44: rejected under 35 U.S.C. 103(a)

Claims **10, 14, 15** and **44** are rejected under 35 U.S.C. 103(a) as being unpatentable over **GB 1 517 449** (of record) in view of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors(newly cited), Burkhardt** (U.S. Patent No. 4557251)(of record), **Ryder** (U.S. Patent No. 3939968) (of record) and **US2847067 (Brewer)**(of record), as applied to claims 1 and 43 above, and further in view of **Stouman et al** (of record).

GB 1 517 449 discloses the invention substantially as set forth in the claims with possible exception to the collector/absorber member being pleated and perforated to permit the flow of water from one side to the other side.

Stouman et al teaches, from applicant's same solar energy water heater field of endeavor, the use of a pleated woven polymer energy collecting surface (18) in a portable flexible wall water solar heater. The porous woven polymer material permits the flow of water from a first to a second side of the of the collecting surface while the pleated shape increases the surface area thereof and thereby increasing the rate of solar heat absorption.

In regard to claims **14, 15 and 44**, for the purpose of permitting the circulation of water through the surface of the **GB 1 517 449** collector and to increase the amount of solar energy collected, it would have been obvious to a person having ordinary skill in the art to modify the collector to be pleated and perforated, in view of the teaching of either **Stouman et al**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

USPTO CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARL D. PRICE whose telephone number is (571) 272-4880. The examiner can normally be reached on Monday through Friday between 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571) 272-1000.


CARL D. PRICE

Primary Examiner

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